

Attorney Docket No.: PTQ-0028
Inventors: Van Eyk et al.
Serial No.: 09/419,901
Filing Date: October 18, 1999
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This listing of the claims will replace all prior versions and listings of claims in the application:

Listing of the claims:

Claim 1 (original): A method for assessing muscle damage in a subject, comprising:

obtaining a biological sample from a subject being assessed for muscle damage; and

evaluating for the presence or absence of one or more different myofilament protein modification products in the biological sample, at least one of said myofilament protein modification products being a chemical adduct of a myofilament protein; and

wherein the presence of at least one myofilament protein modification product in the biological sample is indicative of muscle damage in said subject.

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Claim 2 (original): The method of claim 1, further comprising the step of assessing the amount of the one or more different myofilament protein modification products present in the biological sample, as an indication of the extent of muscle damage in the subject.

Claim 3 (original): The method of claim 1, wherein the evaluating step comprises detecting the presence of at least two different myofilament protein modification products in the biological sample.

Claim 4 (original): The method of claim 3, further

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comprising the step of assessing the amounts of said at least two different myofilament protein modification products present in the biological sample, and comparing the amounts as an indication of the extent of muscle damage in the subject.

Claim 5 (original): The method of claim 3, wherein said at least two different myofilament protein modification products are from the same protein.

Claim 6 (original): The method of claim 3, wherein said at least two different myofilament protein modification products are from different proteins.

Claim 7 (original): The method of claim 6, further comprising the step of assessing the ratio of said at least two different myofilament protein modification products, as an indication of the extent of muscle damage in the subject.

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Claims 8-14 (canceled)

Claim 15 (original): The method of claim 1, wherein the muscle is selected from the group consisting of cardiac muscle and skeletal muscle.

Claim 16 (original): The method of claim 15, wherein the muscle damage is due to at least one condition selected from the group consisting of hypoxia, hypoxemia, ischemia, and reperfusion.

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Claim 17 (original): The method of claim 16, wherein the muscle damage is reversible.

Claim 18 (original): The method of claim 16, wherein the muscle damage is irreversible.

Claim 19 (original): The method of claim 1, wherein said one or more myofilament protein modification product is from at least one myofilament protein selected from the group consisting of troponin I, troponin T, troponin C, α -actinin, actin, tropomyosin, desmin, myosin light chain 1, myosin light chain 2, and myosin light chain 3.

Claim 20 (original): The method of claim 19, wherein at least one of the myofilament protein modification products is a protein-protein complex comprising at least two polypeptides, at least one of said polypeptides being an intact protein or a fragment of a protein selected from the group consisting of troponin I, troponin T, troponin C, α -actinin, actin, tropomyosin, desmin, myosin light chain 1, myosin light chain 2, and myosin light chain 3.

Claim 21 (original): The method of claim 1, wherein at least one of the myofilament protein modification products is a degradation product of a myofilament protein selected from the group consisting of troponin I, troponin T, troponin C, α -actinin, actin, tropomyosin, desmin, myosin light chain 1, myosin light chain 2, and myosin light chain 3.

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Claim 22 (original): The method of claim 19, wherein the chemical adduct of a myofilament protein is a myofilament protein modified by post-translational modification.

Claim 23 (original): The method of claim 22, wherein the post-translational modification is selected from the group consisting of phosphorylation, glycosylation, myristylation, phenylation, acetylation, nitrosylation, and sulphation.

Claim 24 (original): The method of claim 20, wherein the chemical adduct of a myofilament protein is a protein-protein complex modified by post-translational modification.

Claim 25 (currently amended): The method of claim 24, wherein the post-translational modification is ~~selected~~ selected from the group consisting of phosphorylation, glycosylation, myristylation, phenylation, acetylation, nitrosylation, and sulphation.

Claim 26 (original): The method of claim 21, wherein the chemical adduct of a myofilament protein is a degradation product of a myofilament protein modified by post-translational modification.

Claim 27 (currently amended): The method of claim 26, ~~wherein~~ wherein the post-translational modification is selected from the group consisting of phosphorylation, glycosylation, myristylation, phenylation, acetylation, nitrosylation, and sulphation.

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Claim 28 (original): The method of claim 8, wherein the muscle is cardiac muscle and the myofilament protein modification product is phosphorylated troponin I.

Claims 29-30 (canceled)

Claim 31 (original): The method of claim 8, wherein the myofilament protein is myosin light chain 1.

Claims 32-33 (canceled)

Claim 34 (original): The method of claim 1, wherein the biological sample is selected from the group consisting of cardiac muscle tissue, a component of cardiac muscle tissue, blood, blood serum, blood plasma, skeletal muscle tissue, a component of skeletal muscle tissue, and urine.

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Claim 35 (original): A method for assessing muscle damage in a subject, comprising:

obtaining at least two biological samples from a subject being assessed for muscle damage; and

evaluating for the presence or absence of one or more myofilament protein modification products in the biological samples;

wherein said biological samples are not obtained simultaneously; and

wherein the presence of one or more myofilament protein modification products in at least one of said biological samples is indicative of muscle damage in the subject.

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Claim 36 (original): The method of claim 35, wherein at least one of the myofilament protein modification products is a chemical adduct of a myofilament protein.

Claim 37 (original): The method of claim 35, further comprising assessing a change with time in the presence or amount of one or more myofilament protein modification products in the biological samples, as an indication of the extent of muscle damage in the subject.

Claim 38 (original): The method of claim 35, wherein the evaluating step comprises detecting the presence of at least two different myofilament protein modification products in the biological samples.

Claim 39 (original): The method of claim 38, further comprising the step of assessing a change with time in the amounts of said at least two different myofilament protein modification products present in the biological samples, as an indication of the extent of muscle damage in the subject.

Claim 40 (original): The method of claim 38, wherein said at least two different myofilament protein modification products are from the same protein.

Claim 41 (original): The method of claim 38, wherein said at least two different myofilament protein modification products are from different proteins.

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Claims 42-68 (canceled)

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